Lesson 2.2 Notes

1. The hair on my head is already 2 feet long. It grows $\frac{1}{2}$ inch per month.

Is the relationship linear or exponential? Linear

Is the relationship discrete or continuous? Continuous

Describe a reasonable domain for the function. Positive Real Numbers

Write an appropriate function to describe the situation.

$f(x) = \frac{1}{2}x + 24$

**You must convert the 2 foot length of hair to inches so that units match.

**Remember that we are writing an explicit function because the function is continuous.

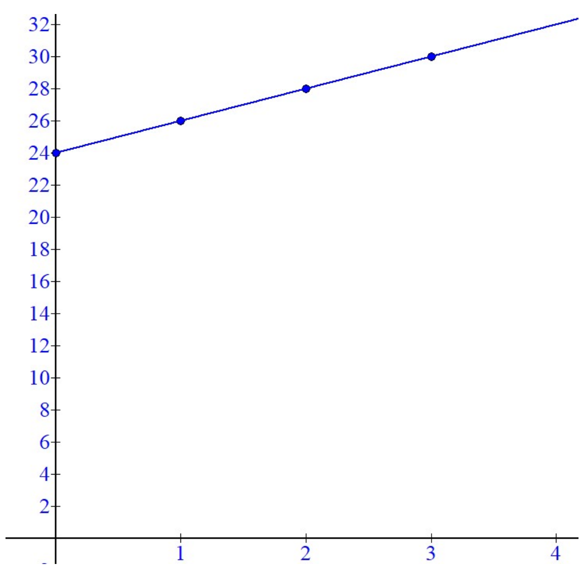
Explain what each part of your function represents.

The $\frac{1}{2}x$ represents the $\frac{1}{2}$ inch that my hair grows per month. The $+24$ represents the 2 feet (which is 24 inches) of length that my hair already has.

Create a table of values for the function.

x	$f(x)$
0	24
1	26
2	28
3	30

Graph your function.



2. Computafest has a net income of 2 million dollars. They develop a plan aimed at increasing its net income by 15% each year.

Is the relationship linear or exponential? Exponential

Is the relationship discrete or continuous? Continuous

Describe a reasonable domain for the function. Positive Real Numbers

Write an appropriate function to describe the situation.

$f(x) = 1.15^x \cdot 2$

**Remember that we want the company to be worth 115% of the previous year.

**Remember that we are writing an explicit function because the function is continuous.

Explain what each part of your function represents.

The 1.15^x represents that we want the company to be worth 115% of its previous year's worth. The $\cdot\ 2$ represents the 2 million dollars the company is already worth.

Create a table of values for the function.

x	$f(x)$
0	2
1	2.3
2	2.645
3	3.04175

$f(x)$ is in millions of dollars.

Graph your function.